

CLAIMS:

We claim:

1. An automatic fire extinguisher module for stove grease fires consisting of:

an enclosure means having a surrounding wall forming at least one cavity and said cavity having a top and bottom and a base substantially perpendicular to said walls covering top of said cavity,

at least one cover means for substantially sealing said bottom of said enclosure,

a mount means for securing said enclosure above said stove,

a hinge means interposed between said enclosure and said cover for unsealing and opening said enclosure,

at least one dry fire suppression agent means stored internal to said enclosure in sufficient quantities for extinguishing a fire and preventing reingintion,

a foil separator means having two ends where said first end is fastened interior to said enclosure and where second end is interspersed in said suppression agent for controlling the decent and direction of deployment of said agent,

a thermally actuated trigger means for releasing said cover and to allow said cover to swing open and out of the path of said agent.

2. The invention according to claim 1 wherein said trigger means consist of the following;

a thermally absorptive housing having a first and second hole intersecting at substantially right angles where said first hole is bored through,

a latch retracting pin means slidingly mounted inside said first hole for releasing said cover and breaking said enclosure seal,

a latch hold means for clasping around said retracting pin is mounted on said enclosure means,

a shoulder means mounted on said pin for cocking said pin in locked position,

a spring means interposed between said housing and said pin and drivingly connected to said housing and said pin for moving said pin to the release position and away from said latch hold means,

a first and second ball means slidingly mounted interior to said second hole wherein said first ball means contacts said pin shoulder for placing a force on said first ball that directs said first ball away from said pin,

a thermally actuated means mounted in said housing for holding said first and said second ball against said pin shoulder and to provide axial movement away from said pin at a predesigned temperature,

said second ball means for axial movement and force transmission to said disk mounted in said second housing hole and interposed between and drivingly connected to said thermally actuated means and said first ball.

3. The invention according to claim 2 wherein said thermally actuated means consist of a bimetallic disk that moves from original position to new position directionally away from said pin at a predesigned temperature.
4. The invention according to claim 2 wherein said thermally actuated means consist of eutectic material that melts and gives way for displacement of said first and second balls directionally away from said pin at a predesigned temperature.
5. The invention according to claim 1 wherein said trigger means consists of;
 - a thermally absorptive housing having a blind hole,
 - a latch retracting pin means slidingly mounted inside said first hole for releasing said cover,

a latch hold means for clasping around said retracting pin is mounted to said enclosure means,

a spring means interposed between said housing and said pin and drivingly connected to said housing and said pin for moving said pin to the release position and away from said latch hold means,

a eutectic material means mounted in said housing hole and interposed between and drivingly connected to said housing and said pin for holding said pin and to provide axial movement away from said pin by melting at a predesigned temperature,

6. The invention according to claim 1 wherein said latch hold means consist of the following;

a hinge means mounted to said enclosure,

a lever means with two ends wherein the first end is rotationally mounted on said hinge means and said second lever end is interposed between said retracting pin and said cover for providing sufficient force on said cover to effectively seal said enclosure.

7. The invention of claim 1 wherein said foil consist of at least one foil sheet means substantially circumscribed by said enclosure wall for distributing said agent on said fire.

8. The invention according to claim 1 wherein said foil consist of;

a plurality of foil sheet means for efficiently delivering said agent wherein said sheets are stored interior to said enclosure substantially parallel to each other and said cover with a substantially equal amount of said agent interspersed between said sheets,

a plurality of hinge means mounted for limited rotation and said hinge means singularly interposed between a pair of said sheets forming a continuous chain of said sheets and said hinges and when deployed from said enclosure said sheets and said hinges form a zig-zag pattern.

9. The invention according to claim 8 wherein said foil sheet means are mesh screen means for allowing passage of some of said agent through said screen to improve distribution on said fire for open cover deployment.
10. The invention according to claim 1 wherein said foil means consist of at least one pocket means mounted on said foil means wherein said foil means is an elongated strip having two ends where first end is mounted interior to said enclosure and said pockets consist of an essentially flexible four-sided material wherein three of said sides fasten to said foil and said fourth side remains unfastened and farthest away of said four sides to said foil first end and said pocket is filled with said agent.
11. The invention according to claim 1 wherein said mount means consist of at least one magnet means for mounting to metal objects.
12. The invention according to claim 1 wherein said enclosure contains a pliable seal to substantially seal the interface between said cover and said enclosure.
13. The invention according to claim 1 wherein a system for turning off energy to stove upon activation of said release pin opening said cover of said enclosure comprising;
- an electrical micro switch means mounted exterior to said enclosure and adjacent to said cover and activated by said cover swinging open,
- a stove energy control means and a wire electrically connecting said switch and said energy control means.
14. A fire extinguisher unit comprising:
- a hollow cupped closure base having a first and second side and a top and bottom wherein said closure having a bottom opening having a perimeter that is substantially planar and placed above and substantially directed toward a fire,

a hinge attached to said first side such that the axis of rotation is substantially parallel with plane of said opening,

a cover rotationally attached to said hinge and in at least one rotational disposition substantially enclosing said cupped closure,

a trigger mechanism wherein;

a eutectic fuse pin having an axis disposed substantially parallel with said opening plane and said pin having a first and second end, said first end is partially encircled by said closure second side and coaxially disposed and partially encircled by said cover closure and disposed in thermal communication with said fire,

a flexible sheet having a first and second end where said first end is fastened interior to said hollow cupped closure base and said sheet is disposed substantially parallel to said opening perimeter plane,

a fire suppression agent interposed between at least said flexible sheet and said hollow cupped closure base.

15. A fire extinguisher unit as in claim 14 whereby;

heat from said fire causes said eutectic fuse pin to melt releasing said cover to rotationally swing around said hinge axis;

said fire suppression agent stored between said sheet and said closure base pressing down on said sheet causes unrestrained said second sheet end to swing down allowing said agent to flow onto said fire.

16. A fire extinguisher unit as in claim 14 wherein said flexible sheet is comprised of; a plurality of said flexible sheets having a substantially planar surface,

a plurality of rotationally limited hinges interposed between said second sheet end and said first end and the successive said sheets and said hinges fastened similarly and deployed out of said closure having a maximum included angle between said sheet and said opening perimeter plane of less than sixty degrees wherein said successive said sheets and hinges form a zig-zag pattern and said plurality of sheets and hinges store substantially parallel to each other occupying no greater planar area than interior most said flexible sheet,

17. A fire extinguisher unit as in claims 14 and 16 wherein said fire suppression agent is interposed between said plurality of sheets,
18. A fire extinguisher unit as in claim 14 wherein said trigger mechanism comprises;
a housing with an interior hole rigidly mounted to said closure cover,
a pin slidingly mounted in said bearing block along axis,
a spring axially interposed and drivingly connected to said block and said pin,